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INTERNATIONAL SEARCH REPORT

Technology Center 2100

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 00-320	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/US 01/ 17426	International filing date (day/month/year) 31/05/2001	(Earliest) Priority Date (day/month/year) 13/07/2000
Applicant CATERPILLAR INC		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

1
☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/17426

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 F02D41/38 F02D41/40 F02D41/10 F02D41/12

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 F02D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	EP 1 077 321 A (MAZDA MOTOR) 21 February 2001 (2001-02-21) abstract column 1, line 33 - line 56 column 18, line 7 - line 11 column 21, line 3 - line 21 figure 13 ---	1-4,7, 9-11,14, 16,17
X	PATENT ABSTRACTS OF JAPAN vol. 011, no. 247 (M-615), 12 August 1987 (1987-08-12) & JP 62 055458 A (TOYOTA MOTOR CORP), 11 March 1987 (1987-03-11) abstract --- -/--	1,3,10

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

& document member of the same patent family

Date of the actual completion of the international search

6 December 2001

Date of mailing of the international search report

13/12/2001

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INTERNATIONAL SEARCH REPORT

International Application No.

PCT/US 01/17426

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 2 775 316 A (PEUGEOT) 27 August 1999 (1999-08-27) page 2, line 37 -page 3, line 29 abstract ---	1
A	US 5 947 380 A (STREICHER JAMES J ET AL) 7 September 1999 (1999-09-07) cited in the application the whole document ---	1,10
A	US 5 407 131 A (MALEY DALE C ET AL) 18 April 1995 (1995-04-18) cited in the application the whole document -----	1,10

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/17426

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 1077321	A	21-02-2001	JP 2001055951 A EP 1077321 A2	27-02-2001 21-02-2001
JP 62055458	A	11-03-1987	JP 5068637 B	29-09-1993
FR 2775316	A	27-08-1999	FR 2775316 A1	27-08-1999
US 5947380	A	07-09-1999	DE 19839572 A1 GB 2330872 A ,B JP 11210592 A	06-05-1999 05-05-1999 03-08-1999
US 5407131	A	18-04-1995	NONE	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/17426

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G06F 17/60

US CL : 705/10, 14

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 705/10, 14

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EAST, WEST, INTERNET

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,724,521 A (DEDRICK) 03 March 1998, Abstract.	1-6
X	WO 98/57276 A1 (NAZEM et al) 17 December 1998, Abstract.	1-6
X,P	US 5,983,227 A (NAZEM et al) 09 November 1999, Abstract.	1-6
A,P	US 6,014,638 A (BURGE et al) 11 January 2000, Abstract.	1-6
A,P	US 5,978,766 A (LUCIW) 02 November 1999, Col. 2, lines 20-63.	1-6
A,P	US 5,974,451 A (SIMMONS) 26 October 1999, Abstract.	1-6

☒ Further documents are listed in the continuation of Box C.
 ☐ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"A" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

11 OCTOBER 2000

Date of mailing of the international search report

14 NOV 2000

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/17426

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
T	Excerpts from the Internet <URL: http://myhome.prodigy.net >. 11 October 2000, all pages.	1-6
T	Excerpt from the Internet <URL: http://home.netscape.com >. 11 October 2000, all pages.	1-6